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Congenital Heart Disease

USE OF LARGE DIAMETER STENTS WITH MAXIMAL EXPANSION LIMITS RE-INTERVENTION IN TREATMENT OF NATIVE COARCTATION OF THE AORTA

Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 3:45 p.m.-4:30 p.m.

Session Title: Novel Treatment Strategies for High Risk Congenital Heart Patients
Abstract Category: 12. Congenital Heart Disease: Therapy
Presentation Number: 1151-321

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Background: Questions remain regarding reintervention after percutaneous stent placement for native coarctation of the aorta (CoA). We describe our experience.

Methods: All pts with native CoA treated with stent placement between 1997 and 2013 at our institution were included. Records prior to intervention and during follow-up were reviewed.

Results: 38 pts (32% female) were identified. Median age at intervention: 12.3 yrs (2-51.7 yrs), median weight: 43.7 kg (14.4-92kg). All pts had a left aortic arch with juxtaductal CoA. No periprocedural or late mortality occurred. No cases required ICU admission post-intervention. Periprocedural complications occurred in 2 pts: 1 stroke and 1 aneurysm at the stent site. Median follow-up: 3.9 yrs (8 days-10.9 yrs). 12 (%) pts required reintervention at a median of 3.5 yrs (0.9-5.45 yrs) after index procedure. Pts with stents placed before age 12 accounted for 75% of re-interventions performed to allow for somatic growth. 3 (%) pts less than 12 yrs had unplanned reintervention due to aneurysms. Stents with expandable diameter >18 mm were used in 33/38 patients. 3/5 (60%) of pts with smaller stents and 9/33 (27%) patients with larger stents required reintervention.

Complete Series, Age 2-51 yrs (n=38)			
	Pre-intervention	Post-intervention	p-value
Median SBP gradient at catheterization	33.5 mmHg (8-82)	3.0 mmHg (0-10)	<.01
Mean ratio of CoA segment diameter: descending Aorta at diaphragm	0.31 (+/-0.14)	0.88 (+/-0.18)	<.01
	Presentation	Last follow-up visit	p-value
Median 4 extremity SBP gradient	38.5 mmHg (2-91)	0.5 mmHg (0-16)	<.01
pts hypertensive (SBP >95th percentile)	34/36 (94 %)	10/18 (56%)	
Re-intervention during follow-up			
	<12 years (n=19)	>12 years (n=19)	p-value
Planned (staged or somatic growth)	8/19 (42%)	1/19 (5 %)	<.01
Un-planned	3/19 (16%)	0/19	NS
Total	11/19 (58%)	1/19 (5%)	
SBP: systolic blood pressure			

Conclusion: Use of stents expandable to a diameter of >18mm and efforts to achieve a dilated diameter approximate to the descending aorta diameter at the diaphragm may limit the frequency of re-interventions in patients treated for native CoA. Planned and un-planned re-interventions increased under age 12.